Meeting Summary: North American Carbon Price Roundtable

Beyond Paris: The Road Toward a North American Carbon Price



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THE ASPEN INSTITUTE ENERGY & ENVIRONMENT PROGRAM

PARTNERSHIP FOR RESPONSIBLE GROWTH

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INTRODUCTION

The purpose of the North American Carbon Price Roundtable, co-hosted by the Aspen Institute and the Partnership for Responsible Growth, and held at the Aspen Institute offices in Washington, DC on May 24-25, 2016, was to assess the potential for policy agreement in the area of climate change, and specifically to evaluate potential agreement and collaboration that the North American nations can reach on the topic of carbon pricing in the future.

Mexico, Canada, and the United States are in the midst of an energy transition with the potential for abundant, inexpensive natural gas (and other available fossil fuels) well into the future. There has been a shift in power generation in Canada and the United States from coal to natural gas and renewable energy, and energy efficiency improvements are expected to lead to much flatter demand over the next couple of decades. Technological innovation is presenting new choices about how to use electricity, while grids are getting smarter. Mexico, meanwhile, is beginning to transform the way its entire energy industry will work.

At the same time, there are new developments in climate and energy policy globally as well as across the North American continent. Mexico has a new national climate law and a strong pledge under the Paris agreement. In Canada, after a period of uncertainty, changes in national and provincial governments have led to new opportunities in energy and climate policies. After the collapse of climate legislation in the US Congress, the President has used executive authority in the US to push the reduction of greenhouse gas (GHG) emissions and led efforts to increase energy efficiency and renewable energy.

Each of the North American countries has pursued these developments more or less independently. There is a significant opportunity to work more closely together in the future to align energy and climate policies across the continent. The environmental and economic benefits or advantages of doing so would be greater than these countries acting in isolation of one another.

SETTING THE STAGE: GLOBALLY AND LOCALLY

Carbon pricing is not a silver bullet but it is a potentially critical market mechanism for establishing prices, unlocking private investment, and speeding-up the transition to a low-carbon economy.

GLOBAL PROGRESS AND THE PARIS AGREEMENT

Since 2012, the number of scheduled or implemented carbon pricing schemes around the world has doubled with over 60 jurisdictions covering about 7 billion tons of carbon dioxide (CO2). Seven of the ten largest economies are pricing carbon in some way. When China begins its national carbon market, around 25% of global emissions will be covered by some kind of carbon price.

Similarly, over the past three years, the number of global companies reporting the use of an internal carbon price has tripled from 150 to 450, and 1000 companies will use one by the end of 2017. (The prices in these internal schemes are often higher than the ones in government schemes.) Businesses are also starting to advocate more loudly for government pricing policies, and they would prefer harmonized or linked systems over a patchwork of different systems.

The average price level of government carbon pricing schemes is under $10/ton, too low to incent economy-wide transformation.

The Paris climate change agreement marked the conclusion of two decades of negotiation and the beginning of an international consensus on ambitious emissions reduction targets for the first time. Paris also fortified the business community's view of managing and pricing carbon emissions and the reality of where economies are heading. In addition, Article 6 of the Paris agreement explicitly allows willing partners to trade, and over 90 countries included carbon pricing or markets as part of their Intended Nationally Determined Contributions. Beyond the agreement itself, the notable level of engagement by the private sector and subnational governments is important, creating at least the potential for shifting some of the political polarization that has stymied greater climate action in the United States.

While global progress has been clear much remains to be done. The average price level of government carbon pricing schemes is under $10/ton, too low to incent economy-wide transformation. In addition to expanding carbon pricing to more jurisdictions, therefore, there is also a need to deepen carbon pricing where it already exists in terms of range and price. Such expansion will require tackling political and economic concerns about competitiveness, high energy prices, impacts on the poor, effects on innovation and investment, and the ways carbon pricing aligns with a range of other existing climate and energy policies.

NATIONAL AND SUB-NATIONAL ACTION AND COMPETITIVENESS

Canada, the United States, and Mexico have all pledged ambitious targets under the Paris agreement that will not be easily achieved. Without a mechanism to price carbon economy-wide these targets may not be achievable in some countries. On the other hand, it is possible that existing sub-national carbon pricing efforts will be sufficient to meet individual pledges – and will continue to accelerate.

In particular, Canada and the United States have made very significant strides on climate change at the subnational level. For instance, about 80% of the Canadian economy and about 90% of Canadian emissions will be covered by a carbon price by 2018, given British Columbia's carbon tax, Alberta's regulatory approach (with a carbon tax to follow), and Quebec, and soon Ontario, aligning with California on cap and trade. The US, meanwhile, has subnational carbon pricing covering only about a quarter of the population, primarily in the north east and the west coast. While much work has been done, there is still a lot of opportunity.

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North America has built one of the highest standards of living in the world with an integrated economy that has virtually no trilateral institutions, and few bilateral ones. In terms of national-level policies, the three countries made strides in coordinating motor vehicle fuel efficiency standards, which is the most important step taken on a continental North American basis to reduce emissions. Whether or not it is realistic to expect a North American carbon price any time soon depends far more on politics in the United States than in Canada or Mexico. For all three countries, though, the issue of economy-wide carbon pricing may be less of a question of whether than a question of when, how, and with what specifics. Any national or continental mechanism must be broadly applied across the economy; integrated with other non-pricing mechanisms for reducing emissions; attentive to prices and systems in other countries; increase in stringency in a predictable way; and build on subnational efforts.

Trade competitiveness is and will continue to be a real concern. There are two dimensions of competitiveness to consider: impacts on the existing industrial base and capital allocation decisions. Few carbon pricing mechanisms have been operating long enough to have a solid data record on competitiveness, but surveys of the literature suggest the European Union Emissions Trading Scheme did not have significant or measurable impacts on competitiveness – perhaps because the price has been too low and a lot of allowances were given away. As carbon prices rise, as they must in order to be serious about reducing emissions, the potential risk of trade competitiveness impacts likely increases.

Competitiveness is hugely important, but should not be an obstacle to carbon pricing. Businesses make decisions based on many factors, only one of which is the carbon price. Crafting border tax adjustments that are World Trade Organization compliant in order to protect a small number of politically important industries may be necessary, though extraordinarily difficult to do. There are also easier, more straightforward ways to devise policies to address competitiveness for key sectors.

Beyond competitiveness, there are other trade-related reasons to have a North American carbon price policy design discussion, including how to harmonize issues such as which entities are taxable, whether non-CO2 greenhouse gas emissions are covered, how biomass energy is treated, and how offsets are treated. Discussions and proposed solutions about these kinds of issues can smooth trading within North America and reduce the need for border carbon adjustments.

DO LOW OIL AND GAS PRICES CREATE AN OPPORTUNITY FOR CARBON PRICING?

The decline in oil and gas prices generally provide space for thinking about a carbon price; one could implement a carbon tax and still not raise natural gas prices to anywhere near the highs in recent years. The oil and gas price drop can be a double-edged sword, though, and price drops can undermine clean energy alternatives and energy efficiency. Low natural gas prices may also spur the retirement of some nuclear plants in the United States, leading to a significant loss of zero-carbon power. Low oil prices also mean low gasoline prices, which could shift the cost-benefit analysis of US fuel economy standards up for a mid-term review next year. In addition, while low oil and gas prices make it easier to discuss carbon pricing from a consumer's perspective, the issues are different for producers, where carbon prices can be seen as damaging in an already contracting market. While it is not a certainty that oil prices will stay low, the situation is different for natural gas, as it appears that North America has cheap natural gas supplies for years to come.

CANADA AND MEXICO: WHAT'S HAPPENING LOCALLY ON CARBON?

Regardless of the diplomacy that occurs or the particular trilateral mechanisms that may exist, the reality of progress will be based on what is possible within each country.

CANADA

In Canada, recent elections at the federal level and in Alberta led to governments more conducive to climate action. In Alberta, the heart of Canada's oil sands production, the new government announced a plan to phase out all coal-fired electricity emissions by 2030 and cap emissions from the oil sands. Alberta will also be instituting a price on carbon; the billions of dollars in potential revenue will be reinvested in the economy in the form of rebates to low- and middle-income consumers, tax cuts to small businesses, transition assistance for communities, and measures to reduce emissions (e.g., large-scale renewables, energy efficiency incentives). As part of its Climate Leadership Plan the government also announced a plan to cut methane emissions 45% by 2025. This target has since been adopted at the national level by Canada, the United States and Mexico.

The fact that a leading hydrocarbon-producing jurisdiction put limits on its own emissions will not only drive significant changes in industry performance and clearly differentiate poor and strong performers, but will also set a powerful policy example for other jurisdictions.

Alberta's policy is groundbreaking. Alberta may be the first oil jurisdiction in the world to institute a hard emissions limit and a competitive carbon price – particularly notable in a low oil price environment – and oil company CEOs were vocal in their support of the carbon price and oil sands emission limit. The fact that a leading hydrocarbon-producing jurisdiction put limits on its own emissions will not only drive significant changes in industry performance and clearly differentiate poor and strong performers, but will also set a powerful policy example for other jurisdictions.

The change in policy in Alberta and the alignment of the oil industry, environmentalists, and civil society behind the plan seem to have occurred in relatively short order. The reality, though, is that the change was the culmination of years of quiet convening among a diverse group of CEOs (not just the "progressives") and the executive directors of environmental groups. From the beginning, the conveners decided it had to be the same people meeting every time – not just the same stakeholders and organizations, but the same small group of people, so as to create trust among individual leaders, who could later bring peers along with them. The conversations were initially private to facilitate mutual understanding, and they started with the basics (e.g., thoughts on climate change, shared values and goals). The conveners also looked forward first before looking backward, discussing where they wanted Canada to be in 2030 and 2050; the world then will clearly consume less oil, and the oil CEOs wanted that oil to be theirs and so were interested

in how best to compete. By unpacking the conversation, starting with common ground, moving backward from a forward-looking vision, and continually returning to the core question of what they want a carbon price to actually do, participants in the conversations made progress and were primed when an opportunity opened.

The Alberta example raises an interesting question of what is actually meant by "climate leadership". Ontario and Quebec have much lower carbon prices (around $13-15/ton) than Alberta and British Columbia (around $30/ton), but the latter's emissions are going up while the former's are going down. Freezing the carbon tax in British Columbia until other jurisdictions "catch up" will result in emissions going up; the goal of ensuring competitiveness may be achieved, but not the goal of actually reducing emissions. Leadership in policy and leadership in achieving targets are not necessarily the same. Furthermore, the carbon price needed in many jurisdictions is much higher than what the public would tolerate, which requires merging pricing tools with other types of policies. In Quebec, for instance, almost all electricity comes from hydro, so there are no emission reductions really available in that sector; other policy solutions, such as electrification of transportation, could have a big impact in that province.

The federal government, meanwhile, has said it would prefer a national approach to carbon pricing but is quite prepared to see the provinces continue to lead. Under the Vancouver Declaration, each province or territory can take action in its own way, and four working groups have been established to look at different options for devising a national action plan on climate change, including a working group on carbon pricing. Conversations are underway, for instance, about how to harmonize the different carbon prices in different provinces (including provinces that basically have a price of zero), and it seems likely that revenues will stay in the provinces in which they are generated (avoiding the politically tricky issue of transferring revenues among provinces). There are also issues about equality of effort; some provinces have ambitious programs to, for instance, phase out coal plants, which are not reflected in the carbon price but are reflected in real costs to taxpayers. (For example, Ontario says its coal phase-out is equivalent to a carbon price of $120/ton.) The working groups have until autumn to come up with a path to knit the various provincial activities together, though there are questions about the feasibility of that timetable and about whether a grand political bargain can be struck.

MEXICO

In Mexico, the climate leadership of former President Calderon was a result of political constraints he faced. He could not pass comprehensive energy reform in Congress, but he saw climate change and renewables development as opportunities to attract international capital and finance to Mexico to address economic growth and energy insecurity in the context of rapidly growing domestic energy demand. The Calderon administration issued a battery of regulations and programs to develop the renewable energy sector. This culminated in comprehensive legislation on climate change that institutionalized the policies; the law was approved by Congress at the end of 2012, at the end of the Calderon administration, and implementation has continued under the Peña Nieto administration. The law requires states to develop climate mitigation and adaptation plans; created a small but important climate fund to finance activities at the federal and subnational levels; established mandatory reporting in all sectors to facilitate creation of a registry; required subsidy reform by 2020; set targets for electricity from renewables; confirmed Mexico's ambitious mitigation targets; and established the possibility of an emissions market and partnerships with other countries. Mexico also has a small carbon tax, between $1 and $3.50 per ton, motivated by revenue, not climate change, though with the volatility of the fossil fuel markets, the tax has started to become a more interesting policy tool.

Once the United States is set on one route, especially if that route has trade implications, it tends to align the interests of Canada and Mexico.

Mexico opened up investments in its energy sector to attract oil finance and enhance competitiveness. The big drop in oil prices, however, helped make renewables in Mexico more competitive; investments in the electricity sector, especially renewables, became more interesting for foreign investors than oil. Even with more pipelines bringing cheaper, cleaner natural gas to Mexico from the United States to replace oil, the past few years have seen overwhelming enthusiasm for investing in the Mexican renewables sector. Renewable energy auctions in Mexico have yielded incredibly competitive prices for renewable energy production – even more competitive than natural gas. Increasingly, large companies in Mexico, especially in energy-intensive sectors, see climate change as something that is here to stay and the move to a low-carbon economy as a way to improve their competitiveness.

LINKAGES AND US ACTION

US Policy impacts the whole continent. 0840902Canada and Mexico are both "policy takers" in North America because they are smaller than the United States and the countries' economies are so integrated. Once the United States is set on one route, especially if that route has trade implications, it tends to align the interests of Canada and Mexico. So if the United States actually adopted a carbon pricing mechanism, it would have significant effects on the actions taken by Canada and Mexico, though the specific reactions would depend on what the system is and what the price is. Big chunks of the world economy, in turn, would move quickly to adopt carbon pricing if the United States adopted carbon pricing and then put in place border carbon adjustments.

Even if Canada and Mexico each achieve a coherent federal carbon price/policy, explicit linkage through a treaty is a political non-starter in the United States; for at least a quarter century, the US Senate has been unable to ratify multilateral treaties, as tiny interest groups can block ratification. Some other kind of linkages may be needed, though it will all be fairly complicated, not least because of the implications for the North American Free Trade Agreement. In the electricity sector, collaboration between the United States and Mexico is already happening, mainly in the border states (*e.g.,* California and Baja California) and in the renewable energy space; California is willing to buy renewable power from Mexico at higher prices than is dispatchable within Mexico. Mexico also offers lots of opportunities to reduce the costs of North American mitigation; its energy sector requires so much modernization and there is such big potential for improving efficiency that the cost of abatement is probably very low.

RELEVANT BACKGROUND PAPERS:

"The state of climate policy in Canada has changed dramatically over the past decade, with carbon-pricing policies being announced or implemented in several large provinces, and the new federal government adopting a far different tone on the issue from that of its predecessor."

A Brief Review of Climate Policy Across Canada
– Chris Ragan, McGill University; The Ecofiscal Commission

"Mexico stands out as an important example of a country that has chosen to exercise a leadership role in the global conversation over climate action, and in recent years has begun to enact meaningful changes in national legislation aimed at reducing the country's GHG emissions, at the same time as it has been successful in building a viable renewable energy industry."

Energy and Climate Transitions in Mexico – The Emergence of a "Politica Ambiental de Estado"
– Duncan Wood, Mexico Institute, Woodrow Wilson Center

WHAT ACTION COULD WE SEE FROM THE UNITED STATES?

Political uncertainty is a given in the United States at the moment, given the upcoming elections in November – particularly the presidential race. That being said, there is a great deal of current action and speculation related to US federal climate change policy.

EPA

In the absence of congressional action to address climate change, the Obama Administration has taken a range of actions using executive authority, as spelled out in the President's 2013 Climate Action Plan. The Environmental Protection Agency (EPA) has been the locus of much of that activity, issuing regulations under existing Clean Air Act authority. While many regulatory efforts are already complete, several remain in motion and may or may not be completed before the end of the Obama Administration.

The centerpiece of the EPA's regulatory efforts on climate change is the Clean Power Plan (CPP), a set of rules emanating from the Clean Air Act Section 111(d) for existing power plants that establishes emission targets to be met from 2022 through 2030. The approach the EPA took in developing the CPP is very specific and unique to the power sector. The Supreme Court stayed implementation of the CPP in February 2016 while litigation about the rule plays out, but there is still a great deal of activity in states working to develop compliance plans and otherwise take action to address climate change. It is too soon to say what the implications of the stay are for the timelines in the CPP – that will depend on the timing and outcome of the litigation – but the momentum towards a cleaner power sector will continue regardless.

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The EPA is also looking fairly comprehensively at methane emissions from the oil and gas sector. The agency recently announced its final rule for new, modified, and reconstructed sources in the oil and gas industry, focusing largely on specific pieces of equipment and leaks. The EPA also announced its first step (a draft information collection process) toward tackling methane emissions from existing sources in the sector. Landfills are another key source of methane emissions, and the EPA revisited and recently finalized these rules.

In addition, the EPA is working to add hydrofluorocarbons into the Montreal Protocol and is encouraging investment in chemicals with low global warming potentials instead. The EPA has also put in place rules (with the Department of Transportation) to improve the fuel economy of light-duty vehicles through the middle of the next decade and has proposed another round of standards for heavy-duty vehicles that should be finalized this summer. Elsewhere in the transportation sector, the EPA recently released a proposed endangerment finding related to the climate impacts of aviation emissions.

One section of the Clean Air Act that the EPA has not utilized yet to regulate greenhouse gas emissions is Section 115, related to international air pollution. The 2008 Notice of Proposed Rulemaking from the EPA after the Massachusetts v. EPA decision requested comment on use of Section 115, and the idea generated some support from business interests, but it has not yet been pursued. To invoke Section 115, the EPA would need to find: (1) that greenhouse gases in the United States endanger the health and welfare of people in other countries, and (2) that there is reciprocity, meaning the other countries provide the United States with "essentially the same rights" the United States is providing them. The first requirement should be easy to establish, and the Paris agreement should satisfy the second.

Section 115 operates through the State Implementation Plans (SIPs) under Section 110 of the Clean Air Act, related to criteria pollutants; SIPs are already being used to regulate greenhouse gases under the Prevention of Significant Deterioration program. The EPA could not impose a carbon tax on sources under Section 115, but it could streamline the process to make state-based carbon taxes of a certain level an approvable plan; it could do the same for pre-built cap-and-trade programs. Section 115 could allow the EPA to go beyond the power sector to include industrial sources, transportation fuels, and other sources in one fell swoop – and let them trade with each other. Section 115 could also provide a defensible legal mechanism for linking American, Canadian, and Mexican carbon pricing efforts; the legislative history of Section 115 contemplated using the provision primarily for cross-border pollution with Canada and Mexico. A future US President conceivably could enter into an executive agreement with Canada and Mexico for a continental approach to carbon pricing and could then implement that agreement through the existing authority in Section 115.

CONGRESS

When it comes to carbon pricing, the political field in Congress might be more fertile than many imagine. In 2008, the Republican platform (with Sen. John McCain at the top of the ticket) identified climate change as a reality that needed to be addressed by the government using market-based mechanisms and technology. That aspect of the Republican Party may still exist but depends on the perspective of the Republican nominee. The climate change issue generally has low political salience, but it is rising. Some congressional Republicans privately acknowledge that the party is in a bad place on climate change, but until they feel they can go in a new direction without putting their careers in jeopardy, they will not. There are other Republicans who are agnostic on climate change but fear Section 115 and other regulations they see coming down the pike; they may talk about regulatory rollbacks, but they understand that there is no plausible political mechanism by which they can roll back the regulatory authority unleashed by Massachusetts v. EPA. Some Republicans also represent coal districts that contain constituents in need of an economic lifeline that could be provided by carbon price revenues (e.g., pensions, training), while others (e.g., from coastal states) are getting motivated to lead on climate change because their districts are being and will be heavily affected by climate impacts (though the jump from perceiving impacts to pressing for climate action is still a tough one for many politicians to make). Pitching action on climate change and clean energy as not just environmental policy but also good or competitive economic policy could be vital, as many Republicans feel more ownership over economic issues than environmental ones.

Pitching action on climate change and clean energy as not just environmental policy but also good or competitive economic policy could be vital.

Some in Senate leadership want to find a way to brand carbon pricing as a Republican approach that solves the regulatory situation but feel they have to wait until 2017 at the earliest. Leadership in the House is cold on the idea, as are the staff and committees of jurisdiction, but there are more House Republicans interested in acting than in the Senate. The November elections are a massive wild card. If Donald Trump loses and hurts Republicans down-ticket, many districts will no longer seem so safe, and the Tea Party may demonstrate its inability to help in elections, which could shift the political calculus of congressional Republicans. Things that have for a long time seemed impossible sometimes almost overnight become inevitable.

Some Democrats would entertain the idea of trading the Clean Power Plan and perhaps other EPA regulatory authority for a carbon price, assuming the design of the carbon pricing system meets certain criteria. Environmental NGOs would fight any grand bargain that targeted non-CO2 regulations (e.g., on mercury or ozone) for rollback, and the idea of repealing the Clean Power Plan could also be a tough sell, though putting the CPP on hold while evaluating the effects of the carbon price might be feasible. (A solid carbon price could have double the effectiveness of the CPP.) The ferocity with which Republicans will be hit for embracing a carbon tax is just as heated at a low price as at a high price, but a higher price allows Republicans to ask for more things in return, such as greater regulatory rollbacks or suspensions, more tax cuts, greater investments in infrastructure, and the like.

On the issue of climate change, the hydrocarbon sector is far more important to congressional Republicans than all other sectors combined. The oil and gas sector is nominally in favor of carbon pricing, while coal is in adamant climate denial. The support for climate action and carbon pricing among a range of other business actors does not particularly matter until those actors take the lead, knock on the doors of Republicans, and make it a point to move Republicans on this issue. Republicans need safe passage, and that will come when businesses show up on Capitol Hill and make the issue a lobbying priority.

CONTINENTAL ALIGNMENT

The North American Free Trade Agreement (NAFTA) had companion agreements, including an agreement on environmental cooperation, which created the trilateral Commission on Environmental Cooperation (CEC). The CEC could potentially create a template for countries to use to create some kind of harmonized continental carbon pricing system, but it is a very weak institution, and it is difficult to envision it helping much on an issue as large and contentious as climate change.

The EPA's work over the past several years very much aligns with Canada's efforts and interests. The Clean Power Plan is significant to Canada to the extent that Canadian hydro and other renewables can count in state's compliance plans. Methane, HFCs, and aviation were also all in the joint statement between the Obama Administration and the Trudeau Administration. The two countries also agreed to align their accounting work on the social cost of carbon.

RELEVANT BACKGROUND PAPERS:

"The scale and scope of the climate change problem, and the need for immediate and significant action, call for a well-coordinated, comprehensive national program to reduce GHG emissions. In the absence of a legislated national solution, Section 115 of the Clean Air Act, titled 'International Air Pollution,' provides a powerful tool to help achieve these goals."

The Potential of Greenhouse Gas Regulation Under Section 115 of the Clean Air Act
– Michael Burger, Sabin Center for Climate Change Law, Columbia Law School

"With a new president and Congress, there will be a serious debate beginning in January 2017 about using carbon revenue to achieve comprehensive tax reform that both parties support. That will bring into play the possibility of a grand bargain featuring a carbon fee, reduced EPA climate regulation, infrastructure spending, coal community relief, and perhaps even some income redistribution to those below and just above the poverty level."

Why a Revenue Neutral Fee on Carbon Fuels Can Be Enacted in 2017-2018
– George T. Frampton, Jr., Partnership for Responsible Growth

THE VIEW FROM THE C-SUITE

Understanding the actual business case for a price on carbon requires understanding a variety of sectors.

CANADIAN INDUSTRY

The oil and gas industry in Canada (and likely other industrial sectors in Canada) holds diverse views on carbon pricing, though momentum and support for some basic themes appear to be increasing. For instance, there is general support for action on climate change, increased agreement that a policy with carbon pricing is an integral part of the response, and greater recognition that the energy economy and climate change are inextricably connected. The Canadian oil and gas sector would generally support climate policy that has a mix of market and regulatory mechanisms, is broad-based, touches consumers, has a meaningful price on carbon (on the order of $30/ton), reinvests a significant portion of carbon price revenue in technology to reduce emissions, protects lower-income households, addresses the low-hanging fruit of methane emissions, and deals with competitiveness and the potential for carbon leakage. Many of these attributes were evident in the climate leadership plan announced in Alberta.

It is not necessarily a technological challenge for the US electric utilities sector to further decarbonize; it is more of a systems issue regarding regulation and policy that will allow for a smooth and equitable transition.

In addition, many companies in Canada grew uncomfortable with the perception of Canadian industry as a stumbling block to progress on climate change and have taken a position in favor of carbon pricing. Broad statements of support, however, only go so far; Canadian industry has not done enough to publicly make the case for its position.

BANKING

Some in the hugely diverse North American banking sector view climate change as a global megatrend that affects every aspect of their operations. Adaptation and resilience are key concerns, as climate change is a threat to the insurance industry and to a range of infrastructure. Some banks are also looking at impacts on carbon-emitting companies from a price on carbon; many large companies would welcome the certainty and would not see material impacts from the prices being contemplated, but medium-sized companies (e.g., in the oil and gas sector) may feel bigger burdens in ways that affect their core credit-worthiness. Capital is already quickly migrating out of risky sectors (e.g., coal, oil) and to areas such as clean tech and utilities (which in Canada are already 80% clean generation sources). With the future unclear, banks will not be putting all their eggs into one basket, but rather are trying to understand the significant disruptive forces coming from a range of directions (e.g., technology, politics).

ELECTRIC POWER

For US electric utilities, climate policy, mitigation, and adaptation are all key topics of discussion in the C-suite. State regulations (e.g., renewable energy and energy efficiency standards) drive a lot of investment decisions, though federal regulations such as the Clean Power Plan could also drive sectorial change. The sector is decarbonizing for a range of reasons, including declining natural gas and renewables costs, an explosion in information technology with energy technology applications, regulation of criteria pollutants, evolving customer expectations and preferences, and new players coming into the industry. It is not necessarily a technological challenge for this sector to further decarbonize; it is more of a systems issue regarding regulation and policy that will allow for a smooth and equitable transition. Electrification of vehicles could be an opportunity for the sector as well, and that too is more a question of policies and deployment than technology, though not all utilities are starting in the same place. Market-based solutions to pollution problems are not new to the sector, which trades pollution credits all the time, but the industry does want balance and flexibility to manage potential costs to consumers.

Climate impacts are also driving change in the sector, with increased attention to and investment in resilience to deal with storms, wildfires, droughts, and the like; some utilities, however, still have the mindset that climate impacts are a century away. When the fight comes about what to do with carbon price revenues (or allowances), directing some of it back into the electricity sector to enhance resilience could be important.

The Mexican power sector is in a different place. Back in 2012, there was only one power company, electricity tariffs in the industrial sector were quite high, baseload power was mainly derived from highly polluting fuel oil and diesel, and there was little investment in wind and solar. After the reform and opening of the sector, competition created pressure to bring down electricity costs and to clean up power generation. The Mexican power sector is moving from fuel oil and diesel to, in part, natural gas, which has required building many gas pipelines. Billions in investment are also now flowing into solar and wind. Mexico therefore has a huge opportunity to reduce emissions quickly. The sector is behind the United States and Canada in terms of figuring out how to price carbon emissions, but if the other two countries figure it out, Mexico can tag along when it gets there.

REFRAMING THE NARRATIVE

Business arguments for climate action focus on innovation, technology, and policies needed to ensure that businesses can tap into opportunities. It is a positive framing rarely heard from policy makers, who focus on costs, constraints, burdens, and reductions. Reframing the discussion has already occurred, to an extent, in Canada and Mexico. A big driver for the climate program in Mexico was a desire to develop a more competitive economy around low-carbon energy. In Canada, the policy in Alberta was about how to remain competitive in 15-20 years by transitioning to a low-carbon economy, and the recent successes in Canada more broadly are partly due to framing the issue as economic and fiscal policy (e.g., via the Ecofiscal Commission). This reframing may be possible in the United States as well, though the US lacks a broadly shared vision of what kind of country it wants to be in 20 years.

A big driver for the climate program in Mexico was a desire to develop a more competitive economy around low-carbon energy.

An additional challenge in the United States is that some in industry stepped up in 2008-09 during the Waxman-Markey debate by supporting the US Climate Action Partnership (USCAP), and many do not want to participate in that kind of process again. That USCAP hangover is aided and abetted by people on Capitol Hill who refuse to forget it. Still, some businesses are eager for action on climate policy, partly from a desire for certainty and partly from the recognition that a lack of national action will mean continued EPA regulation issue by issue. A clear business case can help accelerate discussions about a transition to a low-carbon economy, but businesses are not monolithic, and they all have different business cases.

Beyond the business case, there is also a need to make the consumer case. Consumers in the United States drive every day on roads and bridges that are falling apart, and yet it is still virtually impossible to raise the gas tax to pay for improvements. Making the case on climate change and decarbonization is even tougher.

Taking action on carbon pricing on a North American basis would address what has thus far been a big barrier to climate policy: competitiveness. The institutional capacity may not exist across the three countries to enable discussions around a common continental carbon price, standardization of regulations (e.g., on methane), common standards (e.g., for vehicle emissions), and shared technologies and best practices, but dealing with some or all of those in a broader context across North America would make a significant difference not only in reducing emissions but also in addressing competitiveness concerns. Even short of that, Prime Minister Trudeau and President Obama agreed to do a mid-century review for the Paris Agreement by the end of this year and to coordinate with Mexico; the discussions around where we want to be by mid-century could be a vehicle for business input into how various sectors want to be positioned at that time.

REGULATORY AND PRICE LINKAGES: OPPORTUNITIES TO INTEGRATE REGULATORY REGIMES AND TO HARMONIZE CARBON PRICING IN NORTH AMERICA

Given the divergence within countries and across borders with regard to carbon pricing and other climate programs and policies, the issue of linkage is important. Having a national carbon price in the United States would be a home run in terms of meeting Paris goals, and having that price aligned with Canada and Mexico would be a grand slam, but singles and doubles matter as well.

LINKING REGIONAL PROGRAMS

While a top-down approach of linked national carbon pricing programs could potentially happen, the significant opportunity for a bottom-up approach that builds on the success of existing programs should not be overlooked. Linking the existing regional programs – the California-Quebec (and soon Ontario) program and the Regional Greenhouse Gas Initiative (RGGI) in the US Northeast and Mid-Atlantic – would be at least a double or triple, creating an international program covering states and provinces with a combined GDP that would be the fourth largest economy in the world. The California-Quebec program covers 87% of emissions in California and 77% in Quebec, has a cap that declines every year, and mostly auctions allowances (with an allowance price around $13/ton). The program is a product of the Western Climate Initiative (WCI), which originally consisted of nine states and three provinces that agreed to work together on carbon pricing; one of the reasons it is relatively easy for Ontario to join California and Quebec is that they were all part of the WCI. RGGI, which currently consists of nine states, is a bipartisan program that only covers CO2 emissions from the electricity sector. In RGGI's early days, it suffered from an overabundance of allowances, but the cap was cut in 2013 (taking into account the privately held bank of allowances) and declines 2.5% every year; the combination of lowering the cap and eliminating the bank will raise allowance prices over time from their current level of around $5/ton. RGGI states invest virtually all proceeds from allowance auctions in energy efficiency and renewable energy.

Linking the programs could be driven by the underlying logic of cap-and-trade itself: the bigger the market, the greater the opportunity for trades and for cost-effective emission reductions. (Linkages could reduce prices in the systems, likely to levels that would be far too low to achieve the necessary reductions as a tax – but as long as the caps are rigorous, low prices are a good thing.) There are important differences between the California-Quebec and RGGI programs, including that RGGI's allowance prices and sectoral coverage are much lower, though both of those things could change as RGGI continues to evolve (e.g., potentially expanding to include the transportation sector). There are also important similarities, including that both programs use auctions, overall caps that decline, minimum floor prices, cost containment reserves, offsets, and market monitoring; they also recognize carbon pricing as being just one of many climate policies to be relied upon. Linking the California-Quebec program (which already has international linkages and could potentially bring in Mexico through Mexico's MOU and other ties with California) with the RGGI program (which is the only one involving multiple US states) could yield a system that is both substantively and symbolically significant.

Achieving such linkage, however, will require overcoming a range of challenges. For instance, big political egos could make it difficult to link states together; political will and governors that want to think big will be needed. Another challenge will come from states or provinces concerned about wealth transfers from their residents to others; such interstate transfers boost overall economic efficiency, but their political salience grows as reduction ambitions (and prices) increase. Similarly, small states entering into multi-state programs can be vulnerable to outcomes determined by policies in other states. In addition, the legal challenges around the Clean Power Plan may need to be resolved for regional linkages to gain momentum; without the CPP, there will continue to be issues around environmental integrity and leakage of emissions to other states that do not have carbon pricing regimes in place.

CARBON PRICING DESIGN AND STRATEGY

A carbon price can be a key driver of ambition to reduce emissions cost-effectively and an incentive for innovation, but some form of limit on emissions may need to be built into the design of a carbon pricing policy. Cap-and-trade is one way of doing this, but it is not the only way. A carbon tax approach could include some kind of mechanism that provides assurance that the needed reductions will actually be achieved, such as automatically raising the tax if emissions are above the target, having periodic reviews followed by recommendations for tax adjustments, or using Clean Air Act regulatory authority as a backstop.

A carbon price can be a key driver of ambition to reduce emissions cost-effectively and an incentive for innovation, but some form of limit on emissions may need to be built into the design of a carbon pricing policy.

A key strategic question is whether letting 1,000 climate policy flowers bloom in different jurisdictions risks choking the potential for a much bigger tree in that garden – in other words, whether sub-national policies can be designed in ways that build in the potential for linkage and broader policy solutions. In some ways, letting 1,000 flowers bloom builds a consensus for a broader, more consistent national approach; all of the major US environmental laws passed in the 1970s were based on the work states were doing in the 1960s. In Canada, discussions now are about how to get coordinated economy-wide action in a way that builds on the existing flowers, integrates carbon pricing and non-price mechanisms, and is developed in concert with its North American partners. At the same time, having 1,000 flowers provides a backstop in case that bigger tree never grows.

The structure and design of a carbon pricing system can have significant implications. For instance, if the US pursues a national-level carbon tax, as is often discussed by advocates engaging with Congress, there is the potential for tension with the market-transaction linkages other countries might pursue under Article 6 of the Paris agreement, which lets parties use internationally transferred mitigation outcomes (i.e., carbon credits) to meet their commitments. A federal carbon tax could also drive down the trading prices of allowances in state and regional cap-and-trade programs, leading to serious fiscal implications for states that rely on that revenue (and/or leading to excess allowances being used in Canada, which just increases emissions there).

At a certain point, though, it is important to recognize that arguing over the design of carbon pricing policies will only achieve so much. Building a better mousetrap is helpful, and the nature of the mousetrap affects political support, but the bigger problem is that there are not enough people who want to catch mice. The key may be figuring out a way to frame the issue (e.g., in terms of economic policy) so that more people want to take action, at which point the details of the policy can be figured out.

RELEVANT BACKGROUND PAPERS:

"Rather than waiting for a grand approach in which all jurisdictions (globally, or even just within the United States) would face the same requirements and carbon pricing constraints, California undertook a two-pronged approach: first, we assessed our state-specific circumstances, to develop measures that would apply specifically in California; and second, we simultaneously assessed which measures might lend themselves, through careful design and collaboration with other interested jurisdictions, toward linked GHG reduction programs."

California's Climate Program and Subnational Linkage Efforts
– Mary Nichols and Steven Cliff, California Air Resources Board

"[I]t would not be unreasonable to predict that the programs link in the early 2020's. This linked international carbon market would be a tremendous symbol of progress and serve as a template for North American carbon pricing."

Can Sub-Nationals Help Build North American Carbon Pricing?
– Ken Kimmell, Union of Concerned Scientists

"Pursuing a common North American carbon pricing system should be a priority for trilateral cooperation on climate change."

A Continental Approach to Carbon Pricing
– Jim Prentice, Former Environment Minister, Canada and former Premier of Alberta
and Kate Salimi, Wilson Center

"President Barack Obama and Prime Minister Justin Trudeau share a common vision of a prosperous and sustainable North American economy, and the opportunities afforded by advancing clean growth."

US-Canada Joint Statement on Climate, Energy, and Arctic Leadership

WRAP UP

GLOBAL

In terms of global climate policy, there have been three obvious shifts in the more than two decades since the negotiations in Rio de Janeiro in 1992. First, there has been a move from the Kyoto Protocol approach of legally binding targets and timetables for advanced economies to the Paris approach of countries being legally bound to participate in pledging and reviewing what countries voluntarily commit to do. Second, there has been a shift from addressing the issue only as an environmental question to addressing it also as economic, energy, and land use policy; only environmental ministers attended Rio, and that is clearly no longer the case. Third, negotiations began with a premise that all countries are equal in the UN, but now there is much more overt leadership from the main emitters, such as when President Obama and President Xi Jinping got together and made a sidebar agreement that spurred greater global action.

In terms of promoting carbon pricing globally, two key cautions are important. First, an international negotiation on carbon pricing is highly unlikely any time in the near future. Second, not all countries (even some that are adopting it) have the legal systems or practices to make carbon pricing work well.

CONTINENTAL

North America is currently at an opportune moment politically when it comes to climate policy. President Obama, Prime Minister Trudeau, and President Peña Nieto are all committed to climate change and interested in concerted action. That kind of alignment is very rare.

North America is currently at an opportune moment politically when it comes to climate policy.

A lot of people would say the window for further action is now basically closed given the limited time remaining in President Obama's term. However, there may be possibilities for progress. For instance, it may be possible for the three leaders to broaden an existing working group (e.g., the US-Canada clean energy dialogue) to focus on carbon pricing and subnational harmonization (though some of the subnational work could potentially benefit from conversations between the Environmental Council of the States and the Council of the Federation as well). Another approach could be to take the principles and ideas discussed during this Roundtable and put them forward to the leaders of the three countries to create some kind of Carbon Pricing and Competitiveness Agreement that establishes the political intention and the process to harmonize carbon pricing, so North America leads and prospers. There could also perhaps be greater opportunities on alignment on technology, innovation, competitiveness, and the broader greening of the economy, where carbon reduction is not the focus but an outcome. (This is already happening to a degree, as forests, cars, and the like are already part of trade agreements.) The countries could also develop greater ties across the finance and trade agencies on climate and carbon pricing, exploring items like harmonized standards for corporate disclosure of

climate risks and measures for proxy pricing to monetize carbon in government procurement and contracting. The most likely route, though, may be concretizing work already underway, such as aligning social cost of carbon accounting, working on methane, working on mid-century deep decarbonization strategies, exploring carbon pricing in aviation (through the International Civil Aviation Organization), and figuring out how to avoid double-counting if Canadian renewables are part of states' Clean Power Plan compliance plans; there is a lot already on the table, and just getting those items through before the end of the Obama Administration would be pretty remarkable.

Going forward, it could be powerful if the Canadian and Mexican governments made the argument to the next President of the United States that climate change should be a central part of the trilateral relationship, especially while the (newly reopened) window of alignment still exists among the political leaders of the countries. It is possible that the Aspen Institute and its partners could host a discussion at the Canadian and Mexican embassies between now and the election to gain some gravity and momentum before the elections.

UNITED STATES

As for the United States, the business community has to press Congressional Republicans to pursue a market-based approach to climate mitigation, or else it is a certainty that the regulatory approach will be intensified. To date, Congress has refused to lead on climate change for fear of being out in front and somehow being harmed, but now many countries and subnational jurisdictions are taking action with successful results. It may be necessary to convince policymakers that they will not be stepping out in front in a risky way but at the same time convince them they would still be leaders in taking action – in other words, that it is safe to show US leadership. The arguments have to come from the business side, highlighting the boost to competitiveness and the reduction of operational risks. Business and climate discussions need to be integrated and reframed into something that feels like an opportunity for economic prosperity and competitiveness.

RELEVANT BACKGROUND PAPERS:

"Even ideal climate policies have major implications for trade and investment. In the non-ideal, mosaic world, evident in the Paris Agreement, concerns over economic and environmental effects from differences in climate policy have powerful political appeal, especially in the United States where trade discussions are increasingly fraught."

Carbon Taxes, Trade, and Border Tax Adjustments
– Brian Flannery, Resources for the Future

NORTH AMERICAN CARBON PRICE ROUNDTABLE

The participants in the North American Carbon Price Roundtable listed below took part in their individual, not organizational, capacities. This meeting summary captures the ideas and thoughts expressed during the discussion. The participants are listed for identification purposes only and are not responsible for the summary's narrative, conjecture or any errors.

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